
Appendix 6. Monitoring Programs relevant to Mid-Atlantic Network

Category	Amphibians
Program	Amphibian and Reptile Technical Committee
Organization	Pennsylvania Biological Survey (PABS)
Comments	In conjunction with the Pennsylvania Fish and Boat Commission and Indiana University of Pennsylvania, the committee has initiated an amphibian and reptile atlas project that is designed to use volunteers to develop a detailed, statewide, distributional database for amphibians and reptiles. The project began in 1996 and is expected to be a multi-year project, ending in 2003.
Website	http://www.dickinson.edu/prorg/pabs/amphibians_and_reptiles.htm
Program	FrogWatch
Organization	National Wildlife Federation
Comments	Frogwatch USA is a long-term frog and toad monitoring program managed by the National Wildlife Federation in partnership with the United States Geological Survey to: Collect information about frog and toad populations in the U.S., Promote an appreciation for the diversity of frog and toad species, Foster an understanding of the importance of protecting wetland habitats, Provide an opportunity to learn about and establish a closer relationship with the natural environment.
Website	http://www.nwf.org/frogwatchUSA/
Program	North American Amphibian Monitoring Program
Organization	USGS-PWRC
Comments	The NAAMP is a collaborative effort among regional partners, such as state natural resource agencies and nonprofit organizations, and the U.S. Geological Survey (USGS) to monitor populations of vocal amphibians.
Website	http://www.pwrc.usgs.gov/naamp/
Program	Northeast Amphibian Research and Monitoring Initiative
Organization	USGS-PWRC
Comments	The Department of the Interior's US Geological Survey Amphibian Research and Monitoring Initiative (ARMI) is designed to determine where populations of amphibians are present, to monitor specific Apex populations, and to investigate potential causes of amphibian declines, diseases, and malformations. The Northeast Region of ARMI encompasses thirteen states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia) and the District of Columbia. Dr. Robin Jung at the USGS Patuxent Wildlife Research Center in Laurel, Maryland, coordinates ARMI activities in the Northeast by conducting and developing amphibian research and monitoring projects. In SHEN, 1) monitoring wood frog and spotted salamander populations at all of the known vernal pools (four currently), 2) monitoring populations of stream salamanders (Desmognathus, Eurycea, Gyrinophilus, and Pseudotriton species) at 9 streams in the Park since 1998, and 3) monitoring populations of terrestrial salamanders (Plethodon cinereus, Plethodon cylindraceus) to detect fluctuations in population size, sex ratio, survival, and recruitment.
Website	http://www.pwrc.usgs.gov/nearmi/

Program	Frog Logger
Organization	USGS-PWRC
Comments	USGS and University of Richmond have been monitoring frog calls at multiple sites including Fort A P Hill near FRSP.
Website	http://testweb-pwrc.er.usgs.gov/monmanual/techniques/froglogger.htm
Category	Birds
Program	Waterfowl Population Census
Organization	US Fish and Wildlife Service
Comments	Every spring and summer for the past 50 years, teams of U.S. Fish and Wildlife Service conduct aerial surveys of North America's waterfowl breeding grounds. Flying more than 80,000 miles, they and observers on the ground record the number of ducks, geese and swans, and assess the quality and quantity of waterfowl breeding habitats.
Website	http://waterfowlsurveys.fws.gov/
Program	Breeding Bird Survey
Organization	USGS
Comments	The BBS is a large-scale survey of North American birds. It is a roadside survey, primarily covering the continental United States and southern Canada, although survey routes have recently been initiated in Alaska and northern Mexico. The BBS was started in 1966, and the over 3,500 routes are surveyed in June by experienced birders.
Website	http://www.pwrc.usgs.gov/bbs/
Program	Pennsylvania Breeding Bird Atlas
Organization	Carnegie Museum of Natural History
Comments	Provides distribution of species in the state.
Website	http://www.carnegiemnh.org/atlas/
Program	Center for Conservation Biology
Organization	College of William and Mary
Comments	Conducted multiple inventory and monitoring projects of bird communities in MIDN parks, Military bases of VA,
Website	http://fsweb.wm.edu/ccb
Program	Scarlet Tanager Project
Organization	Smithsonian Institution - Conservation Research Center
Comments	The purpose of this study is to investigate the movement strategies, intra-specific interactions, and habitat use patterns of different age and sex categories of the Scarlet Tanager during the post-nesting/pre-migratory period.
Website	http://nationalzoo.si.edu/ConservationAndScience/TemperateEcosystems/MigratoryBirds/ScarletTanager.cfm

Program	Office of Migratory Bird Management
Organization	US Fish and Wildlife Service
Comments	The Office of Migratory Bird Management undertakes a number of surveys in conjunction with the U.S. Fish and Wildlife Regional Offices, the Canadian Wildlife Service, and State and Provincial wildlife-management agencies, including: Harvest Information Program(HIP), July Duck Production Survey, May Breeding Waterfowl and Habitat Survey, Winter Surveys, Mourning Dove Call-Count Survey, Woodcock Singing-Ground Survey, Audubon Christmas Bird Count, Breeding Bird Survey, Bird Banding Laboratory, Colonial Waterbird Monitoring, Monitoring with Checklists
Website	http://migratorybirds.fws.gov/statsurv/mntrtbl.html
Program	Kentucky Warbler Project
Organization	Smithsonian Institution - Conservation Research Center
Comments	Kentucky Warblers are studied intensively every breeding season, beginning with their first arrival from their wintering grounds in early May until they depart in mid-September.
Website	http://nationalzoo.si.edu/ConservationAndScience/TemperateEcosystems/MigratoryBirds/KentuckyWarbler.cfm
Program	Monitoring Avian Productivity and Survivorship Program (MAPS)
Organization	The Institute for Bird Populations
Comments	The MAPS Program was created by The Institute for Bird Populations in 1989 to assess and monitor the vital rates and population dynamics of over 120 species of North American landbirds in order to provide critical conservation and management information on their populations. The MAPS Program utilizes constant-effort mist netting and banding at a continent-wide network of monitoring stations staffed by both professional biologists and highly trained volunteers. Sites are located at Wildlife Refuges, Military Bases near MIDN parks, and at SHEN.
Website	http://www.birdpop.org/maps.htm
Program	Neighborhood Nest Watch
Organization	Smithsonian Institution
Comments	Provides an opportunity for citizen scientists to gather scientific data about the reproductive success of birds and their year to year survival. Nest watchers follow a pair of birds from nest building to egg laying to the hatching of young. The project continues the following spring when the birds once again return to breed in your neighborhood.
Website	http://sio.si.edu/Nestwatch/
Program	Partners in Flight
Organization	Partners in Flight
Comments	Partners in Flight is a cooperative partnership among federal, state and local government agencies, philanthropic foundations, professional organizations, conservation groups, industry, the academic community, and private individuals. Partners in Flight focuses resources on the improvement of monitoring and inventory, research, management, and education programs involving birds and their habitats. The central premise of Partners in Flight (PIF) is that the resources of public and private organizations in the Western Hemisphere must be combined, coordinated, and increased in order to achieve the greatest success in conserving bird populations in this hemisphere. The power of PIF lies in the synergy that builds when diverse, committed groups who care about birds work together for a common goal. PIF develop Bird Conservation Plans of which there are three in the MIDN, 1) Mid-Atlantic Coastal Plain, 2) Mid-Atlantic Piedmont, and 3) Mid-Atlantic Ridge and Valley.
Website	http://www.partnersinflight.org/

Program	Great Backyard Bird Count
Organization	Audobon Society
Comments	Data from backyard counts is combined with the CBC and Project Feeder Watch
Website	http://www.birdsource.org/gbbc/

Program	Christmas Bird Count
Organization	Audobon Society
Comments	The Christmas Bird Count is a long-standing program of the National Audubon Society. It is an early-winter bird census, where volunteers follow specified routes through a designated 15-mile (24-km) diameter circle, counting every bird they see or hear all day. It's not just a species tally—all birds are counted all day, giving an indication of the total number of birds in the circle that day. All individual CBC's are conducted in the period from 14 December to 5 January (inclusive dates) each season, and each count is conducted in one calendar day.
Website	http://www.audubon.org/bird/cbc/index.html

Program	Falcon Track
Organization	Virginia Department of Game and Inland Fisheries
Comments	Release and monitoring of Peregrine falcons in collaboration with College of William and Mary and VA Department of Transportation. Falcons released at numerous sites including Shenandoah.
Website	http://www.dgif.state.va.us/wildlife/falcontrak/

Category Fish

Program	Patrick Center for Environemtal Research
Organization	The Academy of Natural Sciences
Comments	Conduct studies to 1) understand aquatic and terrestrial ecosystems, including the effects of natural processes and human activities, 2) apply this knowledge to assess ecosystems health and develop watershed-level strategies for enhancing environmental quality, and 3) work with diverse stakeholders, including government, community groups, industry and environmental organizations to improve environmental stewardship
Website	http://www.acnatsci.org/research/pcer/

Program	
Organization	University of Mary Washington
Comments	Staff at Mary Washington have been conducting monitoring of fish communities in the Rappahanock River for a number of years.
Website	http://www.umw.edu/

Category General

Program	Mid-Atlantic Integrated Assessment
Organization	EPA
Comments	The Mid-Atlantic Integrated Assessment (MAIA) is a research, monitoring, and assessment program in the Mid-Atlantic region. MAIA is a partnership of federal, state and local governments; Non-Governmental organizations (NGOs); and academic institutions. MAIA's goal is to provide integrated scientific knowledge to support the environmental decision-making process for the Mid-Atlantic region. This includes development and implementation of multi-scale monitoring designs, scientific tools, and high-quality data.
Website	http://www.epa.gov/maia
Category	Invasive exotic species
Program	West Nile Virus
Organization	Smithsonian Environmental Research Center
Comments	Dr. Marra has been monitoring West Nile virus since 2001 through a collaborative project with the Wadsworth Center of the New York State Department of Health. The project is monitoring the spread of WNV in resident and migratory birds inhabiting the northeastern and mid-Atlantic regions of the U.S. as well as resident and migratory birds in areas within Mexico and the Caribbean. Population-level responses of certain breeding bird species to WNV infection in the mid-Atlantic region are also being studied.
Website	http://www.serc.si.edu/labs/avian/wnv.jsp
Category	Invertebrates
Program	
Organization	North American Butterfly Association (NABA)
Comments	The NABA Butterfly Counts is an ongoing program of NABA to census the butterflies of North America (United States, Canada and partially Mexico) and to publish the results. Volunteer participants select a count area with a 15-mile diameter and conduct a one-day census of all butterflies sighted within that circle. The counts are usually held in the few weeks before or after July 4th in the U.S., July 1st in Canada and September 16th in Mexico.
Website	http://www.naba.org/counts/ma.html
Category	Mammals
Program	White-tailed deer project
Organization	Smithsonian Institution - Conservation Research Center
Comments	For 9 years Bill McShea has monitored the small mammals and migratory birds in 12 areas, 6 of which were fenced to exclude deer. As the profile of under story characteristics changes, it may serve as an indicator for the potential of vertebrate species to live in these forests.
Website	http://nationalzoo.si.edu/ConservationAndScience/TemperateEcosystems/WhiteTailDeer/

Program	Potomac River National Wildlife Refuge Complex
Organization	Fish and Wildlife Service
Comments	Small mammal surveys (conducted by Northern Virginia Community College by Larry Underwood), deer spotlight surveys conducted annually.
Website	http://www.fws.gov
Category	Rare and Threatened species
Program	Pennsylvania Natural Heritage Program
Organization	Pennsylvania Department of Conservation and Natural Resources
Comments	The Pennsylvania Natural Heritage Program (PNHP) conducts inventories and collects data regarding PA's native biological diversity. Field surveys are then conducted to identify component species and gather ecological data. Through this science-driven inventory, vital ecological resources, and sites rich in natural diversity are identified and monitored for future conservation efforts.
Website	http://www.dcnr.state.pa.us/forestry/pndi
Category	Vegetation
Program	Southern Research Station
Organization	US Forest Service
Comments	The Southern Forest Research Station, is involved in developing improved techniques to inventory, monitor and evaluate forest resources; integrating forest health monitoring with forest inventory and analysis sampling procedures, data collection and compilation, and refinement of remote sensing techniques to acquire basic information regarding forest resources.
Website	http://www.srs.fs.usda.gov/
Program	Forest Inventory and Analysis Program
Organization	US Forest Service
Comments	The Forest Inventory and Analysis Program aims to 1) Conserve biological diversity; 2) Maintain the productive capacity of forest ecosystems; and 3) maintain forest ecosystem health and vitality. The northeast and southern regions cover the MIDN area of interest. Measures include estimates of trends in forest area, species composition, growth, mortality, and harvesting levels. Other measures also include a variety of ecological parameters including wildlife habitat, forest biomass, soil conditions, forest fragmentation, and damage due to insects, disease, and other factors. Also, tree crown conditions, lichen community composition, understory vegetation, down woody debris, and soil attributes are collected.
Website	http://www.fs.fed.us/fia/

Program	Forest Health Monitoring Program
Organization	US Forest Service
Comments	A national program designed to determine the status, changes, and trends in indicators of forest condition on an annual basis. The FHM program uses data from ground plots and surveys, aerial surveys, and other biotic and abiotic data sources and develops analytical approaches to address forest health issues that affect the sustainability of forest ecosystems. Monitoring plots are used to evaluate forest type and condition (tree growth, mortality, regeneration, and crown condition). Ozone-sensitive plants are used to measure the response to ambient ozone. Other measures include photosynthetically active radiation (PAR), soils, dendrochronology, wildlife habitat, foliar conditions, lichen communities, and pest monitoring.
Website	http://fhm.fs.fed.us/
Program	Forest Ecology Lab
Organization	Smithsonian Environmental Research Center
Comments	Monitoring mixed species forest on the SERC property, where evaluate the microclimate conditions within the forest as well as the transfer of radiation, heat, water vapor and carbon dioxide to and from the atmosphere. They also study these relations in other forests, including different developmental stages of the core forest type, and forests in other climates. With the understanding gained from these studies the team hopes to make general predictions about how forests function to control microclimate and water balance, accumulate carbon dioxide, and provide habitat for organisms
Website	http://www.serc.si.edu/labs/forest_ecology/
Program	Forest monitoring
Organization	Smithsonian Institution - Conservation Research Center
Comments	A network of 7 one-hectare forest monitoring plots have been following changes in the structure and composition of mature trees at the Conservation and Research Center since 1994.
Website	http://nationalzoo.si.edu/ConservationAndScience/MAB/researchprojects/
Category	Water Quality
Program	
Organization	Virginia Save Our Streams
Comments	Provide training for groups interested in biological monitoring of streams and rivers.
Website	http://www.sosva.com/

Program	Integrated Basinwide Assessment
Organization	Interstate Commission on the Potomac River Basin
Comments	The objective of ICPRB's Basinwide Assessments program is to improve understanding of the health of the Potomac watershed by combining benthic macroinvertebrate, habitat, and water chemistry data collected by the Basin's member jurisdictions (Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia). Combining data from diverse sources has historically been a challenge for scientific investigations, since different water quality management programs often do not require the same level or type of effort in sample collection, organism identification, and data analysis.
Website	http://www.potomacriver.org/living_resources/non-tidal.htm
Program	
Organization	Watershed Alliance of Adams County (WACC)
Comments	The Watershed Alliance of Adams County is a member based non-profit organization whose goals are: To establish a county-wide volunteer water quality monitoring program and maintain a data base on water quality, To identify and sponsor ecologically sound watershed improvement funds from government, foundation grants, businesses and private donations, To conduct educational and public information programs to help residents better understand complex watershed issues affecting Adams County, and to promote a sustainable watershed resource for the future through encouraging sound water management and land use practices. Conducts volunteer based water quality monitoring on Rock Creek and Stevens Run within GETT.
Website	http://user.pa.net/~adamscd/waac.html
Program	
Organization	Smith Mountain Lake Association
Comments	Since 1987 this group has been collecting water quality information from Smith Mountain Lake. The program is administered cooperatively by the Smith Mountain Lake Association and scientists from Ferrum College.
Website	http://www.lynchburg.net/smla/
Program	Stafford Creeks Water Quality Monitoring Project
Organization	Virginia Water Quality Monitoring Council
Comments	Establish and operate multiple sites in three Stafford County watershed, while developing volunteer and citizen awareness of the importance of water quality.
Website	http://www.vwrrc.vt.edu/vwmc/ViewSurveySubmission.asp?SurveyId=270
Program	Virginia Water Quality Monitoring Council
Organization	Virginia Water Quality Monitoring Council
Comments	The Virginia Water Monitoring Council promotes and facilitates coordination, collaboration, and communication of water monitoring programs throughout the Commonwealth of Virginia. 1) Enhance coordination, collaboration, and communication among government agencies, organizations, and individuals involved in monitoring, 2) Encourage effective and efficient use of monitoring resources, and 3) Facilitate the transfer of water monitoring information
Website	http://www.vwrrc.vt.edu/vwmc/

Program	Pennsylvania's State-Wide Surface Waters Assessment Program
Organization	Pennsylvania Fish and Boat Commission
Comments	The Pennsylvania's State-wide Surface Waters Assessment Program (SSWAP) was established in 1997 to assess water quality in 83,000 miles of state streams and rivers. The program is charged to 1) conduct stream assessments, 2) complete a state-wide assessment of all streams within 10 years, 3) document Point Source and NPS impairments state-wide, and 4) identify the causes and sources of these impairments.
Website	http://www.dep.state.pa.us/dep/deputate/watermgt/Wqp/WQStandards/UnassessWater.htm
Program	Fort A P Hill
Organization	United States Army
Comments	Dissolved oxygen, conductivity, alkalinity, and pH are measured on annually at selected sites. Results show that Fort A.P. Hill's environment is characteristic of a swampy watershed drainage, containing tannin-stained waters, low fertility, and relatively low pH values. Dissolved oxygen readings are adequate for supporting many forms of biological life.
Website	
Program	Appomattox River Quality Monitoring Program
Organization	Clean Virginia Waterways and Longwood University
Comments	Some of the program objectives include 1) Increase the quality, quantity and scope of monitoring of water quality parameters in the Appomattox River watershed, and 2) the data collected will form a basis for long-term assessments of tributaries in the watershed. Monitors gather data on pH, dissolved oxygen, nitrates, temperature, and turbidity.
Website	http://web.lwc.edu/cleanva/appomattoxriver.htm
Category	Wildlife
Program	Wildlife management
Organization	Virginia Department of Game and Inland Fisheries
Comments	Monitor and manage wildlife and game species in VA.
Website	http://www.dgif.virginia.gov
Program	Wildlife Mapping Program
Organization	Virginia Department of Game and Inland Fisheries
Comments	WildlifeMapping is an outreach program that allows school children, citizens, community groups, and other city, county and state organizations to collect wildlife-related information that will be available to everyone. The program provides an opportunity for students and volunteers to perform field studies that contribute to the state's biological databases.
Website	http://www.dgif.virginia.gov/wildlifemapping/

Program	Wildlife management
Organization	Pennsylvania Game Commission
Comments	Monitor and manage wildlife and game species in PA
Website	http://www.pgc.state.pa.us/